

To: Office of Dr. Vint Cerf

From: PM Thomas Data Sommelier

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Subject: Briefing: Transitioning from the Transport Layer to the Cognitive Layer via the 5D5G5L Multimodal Framework

1. Executive Summary

This briefing proposes a conceptual evolution of the internet's architecture. Just as TCP/IP (Transmission Control Protocol/Internet Protocol) established the standard for mechanical reliability and data routing, the 5D5G5L (Depth, Generations, Levels) framework is presented as a "Cognitive Protocol." It aims to address the current "Complexity Crisis" by providing a multimodal system for authentication, provenance, and collaborative human-computer interaction (HCI).

2. The Protocol Parallel: TCP/IP vs. 5D5G5L

The internet has mastered the movement of bits, but it remains vulnerable to the degradation of meaning and the erosion of trust. We propose a "Full Stack" view of communication that integrates technical delivery with cognitive clarity.

- **The TCP/IP Foundation:** Operates on the principle of "best-effort delivery." It ensures packets arrive intact but remains agnostic to the quality, ethics, or historical context of the content.
- **The 5D5G5L Overlay:** Operates on the principle of "Authenticated Understanding." It ensures that once a packet is delivered, it is

interpreted within a multidimensional framework of human experience.

3. The 5D5G5L Framework as a Multimodal Standard

To prevent a "Digital Dark Age," we must move beyond flat data structures. The 5D5G5L platform provides the "Digital Vellum" necessary for long-term interpretability.

- **5D (Depth):** Beyond 2D screens and 3D space, this dimension incorporates Contextual Depth. It mandates that every data point carries its provenance and the "why" behind its creation.
- **5G (Generations):** This layer addresses Temporal Continuity. It tracks how information evolves and adapts over time, ensuring that the intent of the original creator is preserved across digital epochs.
- **5L (Levels):** This is the Adaptive Interface layer. It utilizes multimodal inputs (text, voice, tactile, visual) to adjust the complexity of information based on the recipient's expertise and cognitive needs.

4. Thinking Cooperatively: The New Handshake

The 5D5G5L framework utilizes a "Thinking Cooperatively" methodology. Unlike a standard TCP handshake which only verifies connectivity, this "Cognitive Handshake" verifies:

1. **Shared Intent:** Aligning the goals of the human and the AI agent.
2. **Contextual Integrity:** Ensuring the data remains relevant to the

specific domain (e.g., environmental research vs. civic engagement).

3. **Ethical Provenance: Verifying the authenticity of the information through tools like the QR Codex Toolkit.**

5. Conclusion and Vision for the White Paper

The upcoming white paper, *The Multimodal Future of the Internet*, will argue that the next fifty years of the web must be defined by Sociotechnical Resilience. By treating collaborative HCI as a protocol as rigorous as TCP/IP, we can build a "Shared Prosperity" model for the internet—one where data is not just transmitted, but truly understood and preserved.

We invite your insights on how this framework might integrate with Delay-Tolerant Networking (DTN) and the broader goals of information accessibility and digital stewardship.